

YSI 556 Water Meter Calibration Cheat Sheet

This is a simplified version of the calibration instructions in the YSI 556 Manual. I recommend that you read through the YSI 556 Manual calibration tips and instructions on pages 37-53 initially. Calibration is needed for **Conductivity ($\mu\text{S}/\text{cm}$), Dissolved Oxygen (DO % Sat.), pH 7 and pH 10** (our meters DO NOT have ORP sensors).

Preparing for Calibrations:

- Use the transport/calibration cup (clear plastic cup) for all calibrations.
- The instrument must be on for at least 20 min to polarize the DO sensor before calibrating DO (the 2nd of 4 calibrations)
- Find the current **Barometric pressure in mmHg** on the US Bureau of Reclamation site (for Lake Roosevelt use <http://www.usbr.gov/pn/hydromet/wqual.html>.) The value must be in mmHg and then adjusted to the current altitude with this equation: $BP' = BP - 2.5(A_{ft}/100)$ (with BP' = Barometric Pressure at Altitude mmHg, BP = Barometric Pressure at sea level mmHg, A_{ft} = Altitude in feet)
- Rinse and dry sensors with **distilled water** and **clean paper towels** after each calibration. **Also**, pre-rinse transport cup and sensor probe with a small amount of the reagent you are about to calibrate.
- **Do not** over-tighten transport cup to sensor probe as this could cause damage to threads.
- Use the proper amount of reagents to ensure sensors are completely submersed when calibration values are entered.

Sensor to Calibrate	Upright (sensors pointing down)	Inverted (sensors pointing up)
Conductivity	55 ml	55 ml
pH	30 ml	60 ml

Calibration Procedures

Access the Calibrate Screen

1. Press the **On/off** to display the run screen.
2. Press the **Escape** key to display the main menu screen.
3. Use the arrow keys to highlight the **Calibrate** selection and press the **Enter** key.

Conductivity –

1. From the **Calibrate Screen** (described above), choose **Conductivity**, press **Enter**. Then highlight **Specific Conductance**, and press **Enter**.
2. Empty pH 4 storing solution and rinse and dry sensors with **distilled water** and a **clean paper towel**. Then rinse the sensor probe and transport cup with a small amount of **Conductivity** standard and then empty cup.
3. Fill the transport cup with **55 ml** of the conductivity standard.
4. Carefully immerse the sensor probe into the solution. Gently rotate and/or move probe up and down to remove any bubbles from the conductivity cell. The sensor must be completely immersed past its vent hole.

5. Use the keypad to enter **1.0 mS/cm** (1.000 mS/cm is the same as the 1000 μ S/cm listed on the bottle at 25°C.) Press **Enter** to display the Conductivity Calibration Screen.
6. Allow at least one minute for temperature equilibration. When the Specific Conductance value has stabilized (no significant change for 30 seconds) press **Enter**.
7. Press **Enter** again to Continue and then **Escape** to return to the calibrate menu.
8. Rinse with distilled water and dry with clean paper towel.

Dissolved Oxygen Calibration – (note: the instrument must be on for at least 20 min to polarize the DO sensor before calibrating.)

1. Fill the transport cup with approximately 3 mm (1/8”) of water, put sensor probe in cup (make sure DO and Temp sensors are NOT immersed in water). Screw only 1 or 2 threads of the transport cup to make sure the sensors are vented to the atmosphere.
2. From the **Calibrate screen** use arrow keys to highlight **Dissolved Oxygen**, press **Enter**. Select **DO %**, press **Enter**.
3. Enter the current **Barometric Pressure** (see above directions for finding the BP). Press **Enter**.
4. Allow approximately 10 minutes for the air in the cup to become water saturated and the temperature to equilibrate before proceeding.
5. When the reading under **DO%** stabilizes for at least 30 seconds press **Enter**.
6. Press **Enter** again to Continue and then **Escape** to return to the calibrate menu.
7. Dry sensors with a clean paper towel.

pH Calibration –

1. From the calibrate screen use the arrow keys to highlight **pH**.
2. Press **Enter**. Use arrow keys to select the **2-point** option to calibrate the pH sensor using two calibration standards. Press **Enter**.
3. Rinse the clean and dry sensor probe and transport cup with a small amount of **pH 7** buffer and empty cup.
4. Fill the transport cup with **30 ml** of pH 7 buffer and carefully insert probe into cup. Gently rotate and/or move the probe module up and down to remove any bubbles from the pH sensor.
5. Use the keypad to enter the calibration value of the pH 7 buffer **at the current temperature** (found on the bottle.) Press **Enter**.
6. Allow at least one minute for temperature equilibration before proceeding. Once the pH sensor reading is stabilized press **Enter**.
7. Press **Enter** again to Continue to the pH Calibration screen.
8. Rinse and dry sensors with **distilled water** and a **clean paper towel**.
9. Repeat steps 3 through 8 above using **pH 10** buffer for the second pH calibration.
10. After calibrations are complete fill transport cup with **3 ml (approx. 1/8”) of pH 4 buffer for storing** (pH 4 can be found in the little white bottle in case, **never** store sensor with distilled water)
11. Press **Enter**. Press **Escape** to return to the main menu. Press the **On/off** to power off.